

1/31

	130	140	150	160	
1093	GGGGAAACCCAGCACGAGT	GATGTCGTG	CTACCCGCATCT		M.tuberculosis
422	GGGGAAACCCAGCACGAGT	GATGTCGTG	TTACCCGTATCT		M.avium
422	GGGGAAACCCAGCACGAGT	GATGTCGTG	TTACCCGTATCT		M.paratuberc.
507	GGGGAAACCCAGCACGAGT	GATGTCGTG	TACCCAAACGCT		M.phlei
432	GGGGAAACCCAGCACGAGT	CAAGTCGTG	TTACCCGTATCT		M.leprae
207	GGGGAAACCCAGCACGAGT	AATGTCGTG	TTACCCGTATCT		M.gastri
150	GGGGAAACCCAGCACGAGT	GATGTCGTG	TTACCCGCATCT		M.kansasii
2588	GGGGAAACCCAGCACGAGT	GATGTCGTG	TACCAAGGCGCT		M.smegmatis

	210	220	230	240	
1172	CATCTCAGTACCCGTAGGA	AGAGAAAACAATTGTGATTCC			M.tuberculosis
501	CATCTCAGTACCCGTAGGA	AGAGAAAACAATTGTGATTCC			M.avium
501	CATCTCAGTACCCGTAGGA	AGAGAAAACAATTGTGATTCC			M.paratuberc.
586	CATCTCAGTACCCGTAGGA	AGAGAAAACAATTGTGATTCC			M.phlei
511	CATCTCAGTACCCGTAGGA	AGAGAAAACAATTGTGATTCC			M.leprae
286	CATCTCAGTACCCGTAGGA	AGAGAAAACAATTGTGATTCC			M.gastri
229	CATCTCAGTACCCGTAGGA	AGAGAAAACAATTGTGATTCC			M.kansasii
2667	CATCTCAGTACCCGTAGGA	AGAGAAAACAATTGTGATTCC			M.smegmatis

	330	340	350	360	
1289	TGTGGGAG-GATATGTCTCAGCGCTACCCGGCTGAGA-GG				M.tuberculosis
617	TGTGGGATTGATATGTCTCAGCTCTACCTGGCTGAGG-GG				M.avium
617	TGTGGGATTGATATGTCTCAGCTCTACCTGGCTGAGG-GG				M.paratuberc.
703	TGTGGGECCTGTGTGTC-CATCGTCCGCCGGCGATGGCAG				M.phlei
629	TGTGGGATTGGTATGTCTCAACTCTACCTGGTTGAGG-GG				M.leprae
404	TGTGGGATCGATAAGTCTCAGCTCTACCCGGCTGAGG-GG				M.gastri
347	TGTGGGATCGATAAGTCTCAGCTCTACCCGGCTGAGG-GG				M.kansasii
2785	TGTGGGACCTATCTTTC-CGCCCTCTACCTGGCTG-GAGGG				M.smegmatis

Figure 1A

089437 100397

2/31

	370	380	390	400	
1327	CAGTCAGAAAGTGTCTGGTTAGCGGAAGTGGCCTGGGAT				M.tuberculosis
656	TAGTCAGAAAGTGTCTGGTTAGCGGAAGTGGCCTGGGAT				M.avium
656	TAGTCAGAAAGTGTCTGGTTAGCGGAAGTGGCCTGGGAT				M.paratuberc.
742	TAGTCAGAAAGTGTCTGGTTAGCGGAAGTGGCCTGGGAT				M.phlei
668	TAGTCAGAAAGTGTCTGGTTAGCGGAAGTGGCCTGGGAT				M.leprae
443	CAGTCAGAAAGTGTCTGGTTAGCGGAAGTGGCCTGGGAT				M.gastri
386	CAGTCAGAAAGTGTCTGGTTAGCGGAAGTGGCCTGGGAT				M.kansasii
2823	CAGTCAGAAAGTGTCTGGTTAGCGGAAGTGGCCTGGGAT				M.smegmatis

	450	460	470	480	
1406	CGGCACCTGCCTAGTATCAATTCCCGAGTAGCAGCGGGCC				M.tuberculosis
735	CGGCACCTGCCTATATCAACACCCGAGTAGCAGCGGGCC				M.avium
735	CGGCACCTGCCTATATCAACACCCGAGTAGCAGCGGGCC				M.paratuberc.
820	TGCTGCCGCTGTCACAGG--TCCCGAGTAGCAGCGGGCC				M.phlei
747	TGGCACCTGCCTTGTATCAATTCCCGAGTAGCAGCGGGCC				M.leprae
522	CGGCACCTGCCTTGTATCAATTCCCGAGTAGCAGCGGGCC				M.gastri
465	CGGCACCTGCCTTGTATCAATTCCCGAGTAGCAGCGGGCC				M.kansasii
2902	CGACGCTCTGCTTGTATGGTGTTCCTCCGAGTAGCAGCGGGCC				M.smegmatis

	490	500	510	520	
1446	CGTGGGAATCGCTGTGAATCCGCCGGGACCACCCGGTAAG				M.tuberculosis
775	CGTGGGAATCTGCTGTGAATCTGCCGGGACCACCCGGTAAG				M.avium
775	CGTGGGAATCTGCTGTGAATCTGCCGGGACCACCCGGTAAG				M.paratuberc.
857	CGTGGGAATCTGCTGTGAATCTGCCGGGACCACCCGGTAAG				M.phlei
787	CGTGGGAATCTGCTGTGAATCTGCCGGGACCACCCGGTAAG				M.leprae
562	CGTGGGAATCTGCTGTGAATCTGCCGGGACCACCCGGTAAG				M.gastri
505	CGTGGGAATCTGCTGTGAATCTGCCGGGACCACCCGGTAAG				M.kansasii
2942	CGTGGGAATCTGCTGTGAATCTGCCGGGACCACCCGGTAAG				M.smegmatis

Figure 1B

000137 4441650

	610	620	630	640	
1566	GTACCTGAAACCGTGTGCCTACAATCCGTCAGAGCCTCCT				M.tuberculosis
894	GTACCTGAAACCGTGTGCCTACAATCCGTCAGAGCCTCCT				M.avium
894	GTACCTGAAACCGTGTGCCTACAATCCGTCAGAGCCTCCT				M.paratuberc.
976	GTACCTGAAACCGTGTGCCTACAATCCGTCAGAGCCTCCT				M.phlei
907	GTACCTGAAACCGTGTGCCTACAATCCGTCAGAGCCTCCT				M.leprae
682	GTACCTGAAACCGTGTGCCTACAATCCGTCAGAGCCTCCT				M.gastri
625	GTACCTGAAACCGTGTGCCTACAATCCGTCAGAGCCTCCT				M.kansasii
3062	GTACCTGAAACCGTGTGCCTACAATCCGTCAGAGCCTCCT				M.smegmatis

	650	660	670	680	
1606	TTTCCTCTCCGGAGGAGGGT	GGTGATGGCGTGCCTTTTGA			M.tuberculosis
934	C-----	GTGGGGTGATGGCGTGCCTTTTGA			M.avium
934	C-----	GTGGGGTGATGGCGTGCCTTTTGA			M.paratuberc.
1016	CTT-----	GTAGTGGGGTGATGGCGTGCCTTTTGA			M.phlei
947	T-----	GTGGGGTGATGGCGTGCCTTTTGA			M.leprae
722	T-----	GTGGGGTGATGGCGTGCCTTTTGA			M.gastri
665	C-----	GTGGGGTGATGGCGTGCCTTTTGA			M.kansasii
3102	ACGTGT-----	GTGGGGTGATGGCGTGCCTTTTGA			M.smegmatis

	690	700	710	720	
1646	AGAATGAGCCTGCGAGTCAGGGACATGTGTCGCAAGGTTAAC				M.tuberculosis
4	AGAATGAGCCTGCGAGTCAGGGACATGTGTCGCAAGGTTAAC				M.bovis
959	AGAATGAGCCTGCGAGTCAGGGACATGTGTCGCAAGGTTAAC				M.avium
23	AGAATGAGCCTGCGAGTCAGGGACATGTGTCGCAAGGTTAAC				M.intracellul
959	AGAATGAGCCTGCGAGTCAGGGACATGTGTCGCAAGGTTAAC				M.paratuberc.
1046	AGAATGAGCCTGCGAGTCAGGGACATGTGTCGCAAGGTTAAC				M.phlei
972	AGAATGAGCCTGCGAGTCAGGGACATGTGTCGCAAGGTTAAC				M.leprae
747	AGAATGAGCCTGCGAGTCAGGGACATGTGTCGCAAGGTTAAC				M.gastri
690	AGAATGAGCCTGCGAGTCAGGGACATGTGTCGCAAGGTTAAC				M.kansasii
3132	AGAATGAGCCTGCGAGTCAGGGACATGTGTCGCAAGGTTAAC				M.smegmatis



Figure 1D

5/31

	1130	1140	1150	1160	
2082	ACAGCCCAGATCGCCGGCTAAGGCC	CC	AAGCGTGTGCTA		M.tuberculosis
1385	ACAGCCCAGATCGCCGGCTAAGGCC	CC	AAGCGTGTGCTA		M.avium
1385	ACAGCCCAGATCGCCGGCTAAGGCC	CC	AAGCGTGTGCTA		M.paratuberc.
1479	ACAGCCCAGATCGCCGGCTAAGGCC	CC	AAGCGTGTGCTA		M.phlei
1401	ACAGCCCAGATCGCCGGCTAAGGCC	CC	AAGCGTGTGCTA		M.leprae
1175	ACAGCCCAGATCGCCGGCTAAGGCC	CC	AAGCGTGTGCTA		M.gastri
1118	ACAGCCCAGATCGCCGGCTAAGGCC	CC	AAGCGTGTGCTA		M.kansasii
3566	ACAGCCCAGATCGCCGG	TTAAGGCC	CC	AAGCGT	TTGTTA M.smegmatis

	1290	1300	1310	1320	
2241	CTCAAGCACACCGCCGAAGCCGCGGCACAT	CCACCTTGT			M.tuberculosis
1544	CTCAAGCACACCGCCGAAGCCGCGGCACAT	TCATCTT	TA		M.avium
1544	CTCAAGCACACCGCCGAAGCCGCGGCACAT	TCATCTT	TA		M.paratuberc.
1638	CTCAAGCACACCGCCGAAGCCGCGGC	ATCAGC	TTTG		M.phlei
1560	CTCAAGCACACCGCCGAAGCCGCGGCACAT	CACCTTCTA			M.leprae
1334	CTCAAGCACACCGCCGAAGCCGCGGACA	-----ACCGC	--A		M.gastri
1277	CTCAAGCACACCGCCGAAGCCGCGGACA	-----ACCGC	--A		M.kansasii
3726	TTCAAGCACACCGCCGAAGCCGCGGAA	-----GCCA	ACGT	TTTG	M.smegmatis

	1330	1340	1350	1360	
2280	-GGTGGGTG	TGGGTAGGGGAGCGTCCCTCATT	CAGCGAAG		M.tuberculosis
1583	CGGTGGATGTGGGTAGGGGAGCGTCCCTCATT	CAGCGAAG			M.avium
1583	CGGTGGATGTGGGTAGGGGAGCGTCCCTCATT	CAGCGAAG			M.paratuberc.
1676	TGGCTGGTGTGGGTAGGGGAGCGTCCCTG	CATCCGGTGAAG			M.phlei
1600	GGGTGGATGTGGGTAGGGGAGCGTCCCTCATT	CAGCGAAG			M.leprae
1367	AGGT-----TGGGTAGGGGAGCGTCCCTCATT	CAGCGAAG			M.gastri
1310	AGGT-----TGGGTAGGGGAGCGTCCCTCATT	CAGCGAAG			M.kansasii
3764	TT-----TGGGTAGGGGAGCGTCCCTG	ATCCGGTGAAG			M.smegmatis

Figure 1E

6/31

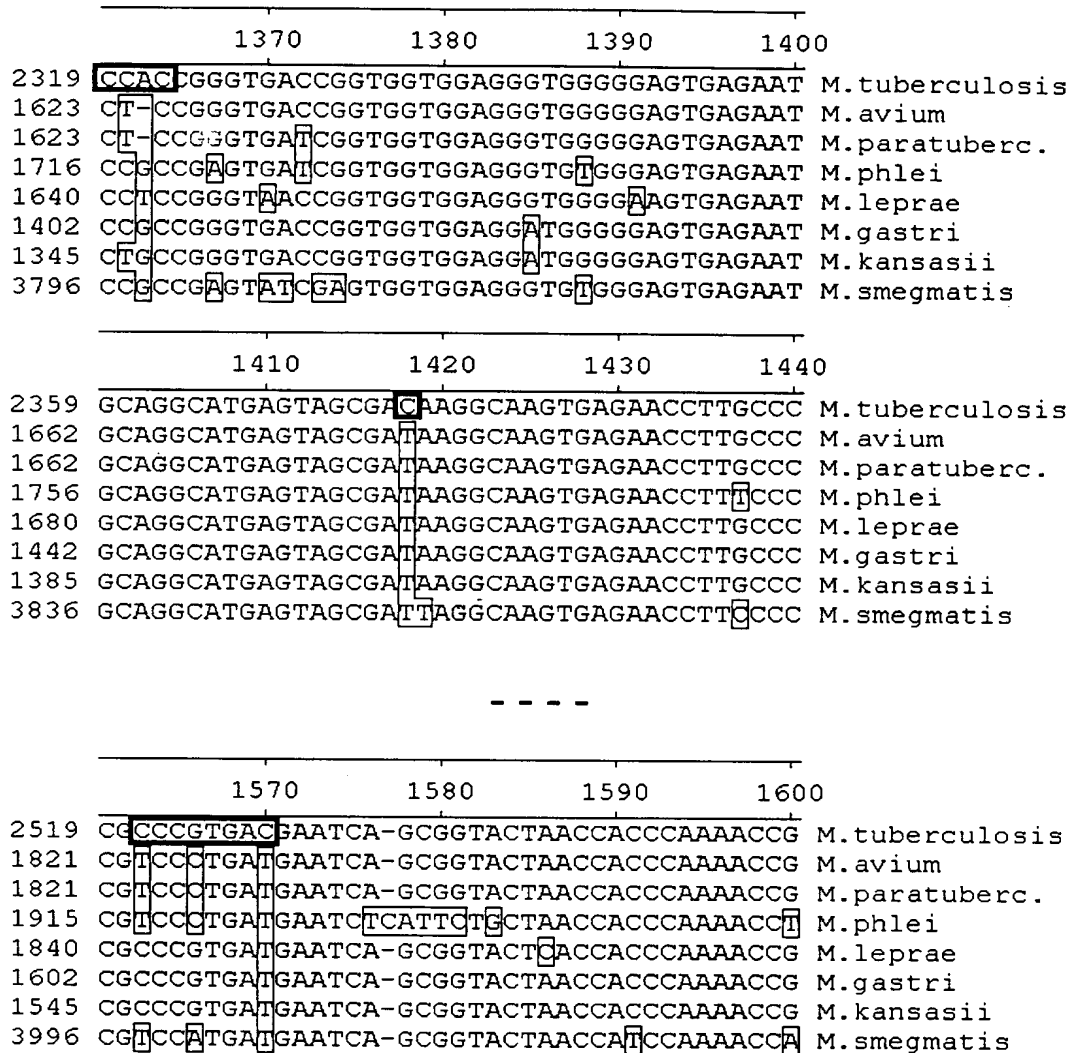


Figure 1F

7/31

	1610	1620	1630	1640	
2558	GAT-CGATCAC-TCCCCTTCGGGGG	TGTGGAGTTC-TGG	M.tuberculosis		
1860	GAT-CGACCAT-TCCCCTTCGGGGG	GTGGCGATT-OGG	M.avium		
1860	GAT-CGACCAT-TCCCCTTCGGGGG	GTGGCGATT-OGG	M.paratuberc.		
1955	GSC-CGATC-ATCC-TTCGGGG	GTGACGGTTG-GG	M.phlei		
1879	GAT-CGACCATATCCCCTTCGGGGG	TATGGAGGTT-OGG	M.leprae		
1641	GAT-CGATCAC-TCCCCTTCGGGGG	GTGGAGGTC-TGG	M.gastri		
1584	GAT-CGATCAC-TCCCCTTCGGGGG	GTGGAGGTC-TGG	M.kansasii		
4035	ACCGTGAACGCACT-TTCGGGG	TGTGGCGTTGGTGG	M.smegmatis		

	1650	1660	1670	1680	
2594	GGCTGCGTGGGAACCTTCGCTGGTAGTAGTCAAGC	GAAAGG	M.tuberculosis		
1896	GGCTGCGTGGGAACCTTCGCTGGTAGTAGTCAAGCA	AATGGG	M.avium		
1896	GGCTGCGTGGGAACCTTCGCTGGTAGTAGTCAAGCA	AATGGG	M.paratuberc.		
1986	GGCTGCGTGGGAACCG-GTG	GGTAGTAGTCAAGCGATGGG	M.phlei		
1917	GGCTGCGTGGGAACCTTCGTTGGTAGTAGTCAAGCG	ATGGG	M.leprae		
1677	GGCTGCGTGGGAGCCTTCGCTGGTAGTAGTCAAGCG	ATGGG	M.gastri		
1620	GGCTGCGTGGGAGCCTTCGCTGGTAGTAGTCAAGCG	ATGGG	M.kansasii		
4071	GGCTGCAATGGGAACCTTCGTTGGTAGTAGTCAAGCG	ATGGG	M.smegmatis		

	1690	1700	1710	1720	
2634	-GTGACGCAGGAAGGTAGCCGTACCAAGTCAGTGGTAA	CA-	M.tuberculosis		
1936	-GTGACGCAGGAAGGCAGCCGTACCAAGTCAGTGGTAA	TA-	M.avium		
1936	-GTGACGCAGGAAGGCAGCCGTACCAAGTCAGTGGTAA	TA-	M.paratuberc.		
2025	-GTGACGCAGGAAGGTAGCCGTACCAAGTCAGTGGTAA	TA-	M.phlei		
1957	-GTGACGCAGGAAGGTAGCCGTACCAAGTCAGTGGTAA	TA-	M.leprae		
1717	-GTGACGCAGGAAGGCAGCCGTACCAAGTCAGTGGTAA	TA-	M.gastri		
1660	-GTGACGCAGGAAGGCAGCCGTACCAAGTCAGTGGTAA	TA-	M.kansasii		
4111	-GTGACGCAGGAAGGTAGCCGTACCGTCAGTGGTAA	TA-	M.smegmatis		

Figure 1G

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8/31

	1730	1740	1750	1760	
2672	-CTGGGGCAAGCC	GGTAGGG	AGAGCGATAGGCAAATCCGT		M.tuberculosis
1974	-CTGGGGCAAGCC	GTAG	AGAGCGATAGGCAAATCCGT		M.avium
1974	-CTGGGGCAAGCC	GTAG	AGAGCGATAGGCAAATCCGT		M.paratuberc.
2063	-CTGGGGTAAACCT	GTAGGG	AGAGTATAGGCAAATCCGT		M.phlei
1995	-CTGGAGCAAGCC	GTAGGG	AGAGCGATAGGCAAATCCGT		M.leprae
1755	-CTGGGGCAAGCC	GTAGGG	AGAGCGATAGGCAAATCCGT		M.gastri
1698	-CTGGGGCAAGCC	GTAGGG	AGAGCGATAGGCAAATCCGT		M.kansasii
4149	-CTGGCGTAAAGCC	GTAGGG	AGTCAATAGGTAATCCGT		M.smegmatis

- - - -

	1970	1980	1990	2000	
2908	AGGGGG	ACCGGAATAT	CGTGAACACCCTTGCGGTGGGAGC		M.tuberculosis
2208	AGGGGG	CCCGGAATAT	CGTGAACACCCTTGCGGTGGGAGC		M.avium
2208	AGGGGG	CCCGGAATAT	CGTGAACACCCTTGCGGTGGGAGC		M.paratuberc.
2298	AGGGGG	ACCGGAATAT	CGTGAACACCCTTGCGGTGGGAGC		M.phlei
2231	AGGGGG	CCCGGAATAT	CGTGAACACCCTTGCGGTGGGAGC		M.leprae
1910					M.gastri
1934	AGGGGG	ACCGGAATAT	CGTGAACACCCTTGCGGTGGGAGC		M.kansasii
4385	AGGGGG	ACCGGAATAT	CGTGAACACCCTTGCGGTGGGAGC		M.smegmatis

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	2410	2420	2430	2440	
3345	ACCTCGACGCCAGTTGGGGG	CGAGTCGTTGTTGAAATACC			M.tuberculosis
284	ACCTCGACGCCAGTTGGGGG	CGAGTCGTTGTTGAAATACC			M.bovis
2645	GCACAGACGCCAGTTTGTGT	TGGAGTCGTTGTTGAAATACC			M.avium
393	ATACAGACGCCAGTTTGTAT	TGGAGTCGTTGTTGAAATACC			M.intracellulare
2645	GCACAGACGCCAGTTTGTGT	TGGAGTCGTTGTTGAAATACC			M.paratuberc.
2737	GCTCGGACGCCAGTTGGGG	TGGAGTCGTTGTTGAAATACC			M.phlei
2668	ACTTCGACGCTAGTTGGGG	TGGAGTCGTTGTTGAAATACC			M.leprae
1910					M.gastri
2372	ACCTCAACGCCAGTTGGGG	TGGAGTCGTTGTTGAAATACC			M.kansasii
4822	GCCTCAACGCCAGTTGGGG	TGGAGTCGTTGTTGAAATACC			M.smegmatis

Figure 1H

000437 400399

9/31

	2450	2460	2470	2480	
3385	ACTCTGATCGTATTGG	GCATCTAACCTCGAACCCCTGAATC			M.tuberculosis
324	ACTCTGATCGTATTGGG	CATCTAACCTCGAACCCCTGAATC			M.bovis
2685	ACTCTGATCGTATTGG	ACACCTAACCTCGAACCCCT	TATC		M.avium
433	ACTCTGATCGTATTGG	ACACCTAACCTCGAACCCCT	TATC		M.intracellulare
2685	ACTCTGATCGTATTGG	ACACCTAACCTCGAACCCCT	TATC		M.paratuberc.
2777	ACTCTGATCGTATTGGG	CCTCTAACCTCGAACCCCTGGATC			M.phlei
2708	ACTCTGAT	CTGATTGACATCTAACCTCGAACCCCTATATC			M.leprae
1910					M.gastri
2412	ACTCTGATCGTATTGG	ACACCTAACCTCGAACCCCTGAATC			M.kansasii
4862	ACTCTGATCGTATTGGG	CCTCTAACCTCGAACCCCTATATC			M.smegmatis

	2490	2500	2510	2520	
3425	GGGTTTAG	GGACAGTGCCTGGCGGGTAGTTTAACTGGGGC			M.tuberculosis
364	GGGTTTAGGG	ACAGTGCCTGGCGGGTAGTTTAACTGGGGC			M.bovis
2724	GGGTTAC	GGACAGTGCCTGGCGGGTAGTTTAACTGGGGC			M.avium
472	GGGTTAC	GGACAGTGCCTGGCGGGTAGTTTAACTGGGGC			M.intracellulare
2724	GGGTTAC	GGACAGTGCCTGGCGGGTAGTTTAACTGGGGC			M.paratuberc.
2817	GGGTTAC	GGGACAGTGCCTGGCGGGTAGTTTAACTGGGGC			M.phlei
2748	GGGTTTAGGG	ACAGTGCCTGGCGGGTAGTTTAACTGGGGC			M.leprae
1910					M.gastri
2452	GGGTTAC	GGACAGTGCCTGGCGGGTAGTTTAACTGGGGC			M.kansasii
4902	GGGTTAC	GGGACAGTGCCTGGCGGGTAGTTTAACTGGGGC			M.smegmatis

- - - -

	2930	2940	2950	2960	
3864	AGTACGAGAGGACCGGGACGGACGGAACCTCT	GGTGACCA			M.tuberculosis
3163	AGTACGAGAGGACCGGGACGGACGGAACCTCTGGT	TACCA			M.avium
3163	AGTACGAGAGGACCGGGACGGACGGAACCTCTGGT	TACCA			M.paratuberc.
3256	AGTACGAGAGGACCGGGACGGACGGAACCTCTGGT	TACCA			M.phlei
3187	AGTACGAGAGGACCGGGACGGACGGAACCTCTGGT	TACCA			M.leprae
1910					M.gastri
2891	AGTACGAGAGGACCGGGACGGACGGAACCTCT	AGTGACCA			M.kansasii
5342	AGTACGAGAGGACCGGGACGGACGGAACCTCTGGT	TACCA			M.smegmatis

Figure 11

00477-1009

11/31

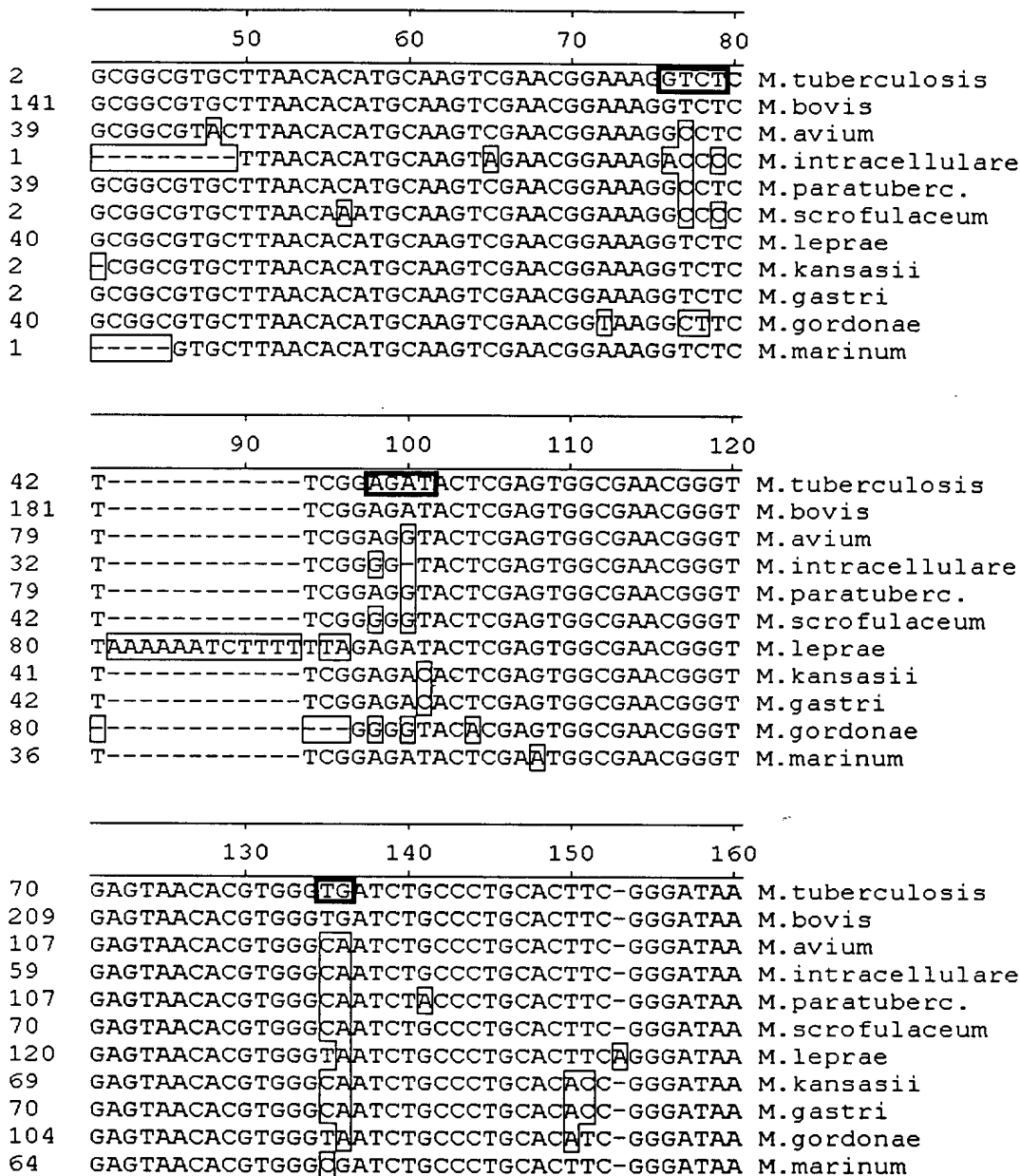


Figure 2A

009437 44680

12/31

	170	180	190	200	
109	GCCTGGGAAACTGGGTCTAATACCGGATAGGAC	CACGGGA			M.tuberculosis
248	GCCTGGGAAACTGGGTCTAATACCGGATAGGACCACGGGA				M.bovis
146	GCCTGGGAAACTGGGTCTAATACCGGATAGGACCTCAAGA				M.avium
98	GCCTGGGAAACTGGGTCTAATACCGGATAGGACCTTTAGG				M.intracellulare
146	GCCTGGGAAACTGGGTCTAATACCGGATAGGACCTCAAGA				M.paratuberc.
109	GCCTGGGAAACTGGGTCTAATACCGGATAGGACCACTTGG				M.scrofulaceum
160	GCCTGGGAAACTGGGTCTAATACCGGATAGGACCTCAAGG				M.leprae
108	GCCTGGGAAACTGGGTCTAATACCGGATAGGACCACTTGG				M.kansasii
109	GCCTGGGAAACTGGGTCTAATACCGGATAGGACCACTTGG				M.gastri
143	GCCTGGGAAACTGGGTCTAATACCGGATAGGACCACAGGA				M.gordonae
103	GCCTGGGAAACTGGGTCTAATACCGGATAGGACCACGGGA				M.marinum

	210	220	230	240	
149	TGCATGTCTTGTGGTGGAAAGCGCTTTAGCGGTGTGGGAT				M.tuberculosis
288	TGCATGTCTTGTGGTGGAAAGCGCTTTAGCGGTGTGGGAT				M.bovis
186	CGCATGTCTTGTGGTGGAAAGC-TTTT-ACGGTGTGGGAT				M.avium
138	CGCATGTCTTGTGGTGGAAAGC-TTTT-GCGGTGTGGGAT				M.intracellulare
186	CGCATGTCTTGTGGTGGAAAGC-TTTT-GCGGTGTGGGAT				M.paratuberc.
149	CGCATGTCTTGTGGTGGAAAGC-TTTT-GCGGTGTGGGAT				M.scrofulaceum
200	CGCATGTCTTGTGGTGGAAAGC-TTTT-GCGGTGTGGGAT				M.leprae
148	CGCATGTCTTGTGGTGGAAAGC-TTTT-GCGGTGTGGGAT				M.kansasii
149	CGCATGTCTTGTGGTGGAAAGC-TTTT-GCGGTGTGGGAT				M.gastri
183	CACATGTCTTGTGGTGGAAAGC-TTTT-GCGGTGTGGGAT				M.gordonae
143	TTCATGTCTTGTGGTGGAAAGC-TTTT-GCGGTGTGGGAT				M.marinum

	250	260	270	280	
189	GAGCCCGCGGCCTATCAGCTTGTGTTGGTGGGGTGACGGCCT				M.tuberculosis
328	GAGCCCGCGGCCTATCAGCTTGTGTTGGTGGGGTGACGGCCT				M.bovis
224	GAGCCCGCGGCCTATCAGCTTGTGTTGGTGGGGTGACGGCCT				M.avium
176	GAGCCCGCGGCCTATCAGCTTGTGTTGGTGGGGTGACGGCCT				M.intracellulare
224	GAGCCCGCGGCCTATCAGCTTGTGTTGGTGGGGTGACGGCCT				M.paratuberc.
187	GAGCCCGCGGCCTATCAGCTTGTGTTGGTGGGGTGACGGCCT				M.scrofulaceum
239	GAGCCCGCGGCCTATCAGCTTGTGTTGGTGGGGTGACGGCCT				M.leprae
186	GAGCCCGCGGCCTATCAGCTTGTGTTGGTGGGGTGACGGCCT				M.kansasii
187	GAGCCCGCGGCCTATCAGCTTGTGTTGGTGGGGTGACGGCCT				M.gastri
221	GAGCCCGCGGCCTATCAGCTTGTGTTGGTGGGGTGACGGCCT				M.gordonae
181	GAGCCCGCGGCCTATCAGCTTGTGTTGGTGGGGTGACGGCCT				M.marinum

Figure 2B

13/31

450 460 470 480

389 AAACCTCTTTCACCATCGACGAAGGTCCGGGTTCTCTCGG M.tuberculosis
 528 AAACCTCTTTCACCATCGACGAAGGTCCGGGTTCTCTCGG M.bovis
 424 AAACCTCTTTCACCATCGACGAAGGTCCGGGTTCTCTCGG M.avium
 376 AAACCTCTTTCACCATCGACGAAGGTCCGGGTTCTCTCGG M.intracellulare
 424 AAACCTCTTTCACCATCGACGAAGGTCCGGGTTCTCTAGG M.paratuberc.
 387 AAACCTCTTTCACCATCGACGAAGGTCTCA---CTTTGTGG M.scrofulaceum
 439 AAACCTCTTTCACCATCGACGAAGGTCTGGGAATCTCTCGG M.leprae
 386 AAACCTCTTTCACCATCGACGAAGGTCCGGGTTCTCTCGG M.kansasii
 387 AAACCTCTTTCACCATCGACGAAGGTCCGGGTTCTCTCGG M.gastri
 420 AAACCTCTTTCACCATCGACGAAGGTCCGGGTTCTCTCGG M.gordonae
 381 AAACCTCTTTCACCATCGACGAAGGTCTCGGGTTCTCTCGG M.marinum

1130 1140 1150 1160

1069 TCTCATGTTGCCAGCACGTAATGGTGGGGACTCGTGAGAG M.tuberculosis
 1208 TCTCATGTTGCCAGCACGTAATGGTGGGGACTCGTGAGAG M.bovis
 1104 TCTCATGTTGCCAGCGGGTAATGCGGGGACTCGTGAGAG M.avium
 1056 TCTCATGTTGCCAGCGGGTAATGCGGGGACTCGTGAGAG M.intracellulare
 1098 TCTCATGTTGCCAGCGGGTAATGCGGGGACTCGTGAGAG M.paratuberc.
 1064 TCTCATGTTGCCAGCGGGTAATGCGGGGACTCGTGAGAG M.scrofulaceum
 1119 TCTCATGTTGCCAGCACGTAATGGTGGGGACTCGTGAGAG M.leprae
 1066 TCTCATGTTGCCAGCGGGTAATGCGGGGACTCGTGAGAG M.kansasii
 1067 TCTCATGTTGCCAGCGGGTAATGCGGGGACTCGTGAGAG M.gastri
 1100 TCTCATGTTGCCAGCGGGTAATGCGGGGACTCGTGAGAG M.gordonae
 1061 TCTCATGTTGCCAGCACGTAATGGTGGGGACTCGTGAGAG M.marinum

1250 1260 1270 1280

1189 CAATGGCCGGTACAAAGGGCTGCGATGCCGCGAGGTTAAG M.tuberculosis
 1328 CAATGGCCGGTACAAAGGGCTGCGATGCCGCGAGGTTAAG M.bovis
 1224 CAATGGCCGGTACAAAGGGCTGCGATGCCGTAAGGTTAAG M.avium
 1176 CAATGGCCGGTACAAAGGGCTGCGATGCCGTAAGGTTAAG M.intracellulare
 1218 CAATGGCCGGTACAAAGGGCTGCGATGCCGTAAGGTTAAG M.paratuberc.
 1184 CAATGGCCGGTACAAAGGGCTGCGATGCCGTAAGGTTAAG M.scrofulaceum
 1239 CAATGGCCGGTACAAAGGGCTGCGATGCCGTAAGGTTAAG M.leprae
 1186 CAATGGCCGGTACAAAGGGCTGCGATGCCGCGAGGTTAAG M.kansasii
 1187 CAATGGCCGGTACAAAGGGCTGCGATGCCGCGAGGTTAAG M.gastri
 1220 CAATGGCCGGTACAAAGGGCTGCGATGCCGCGAGGTTAAG M.gordonae
 1181 CAATGGCCGGTACAAAGGGCTGCGATGCCGCGAGGTTAAG M.marinum

Figure 2C

14/31

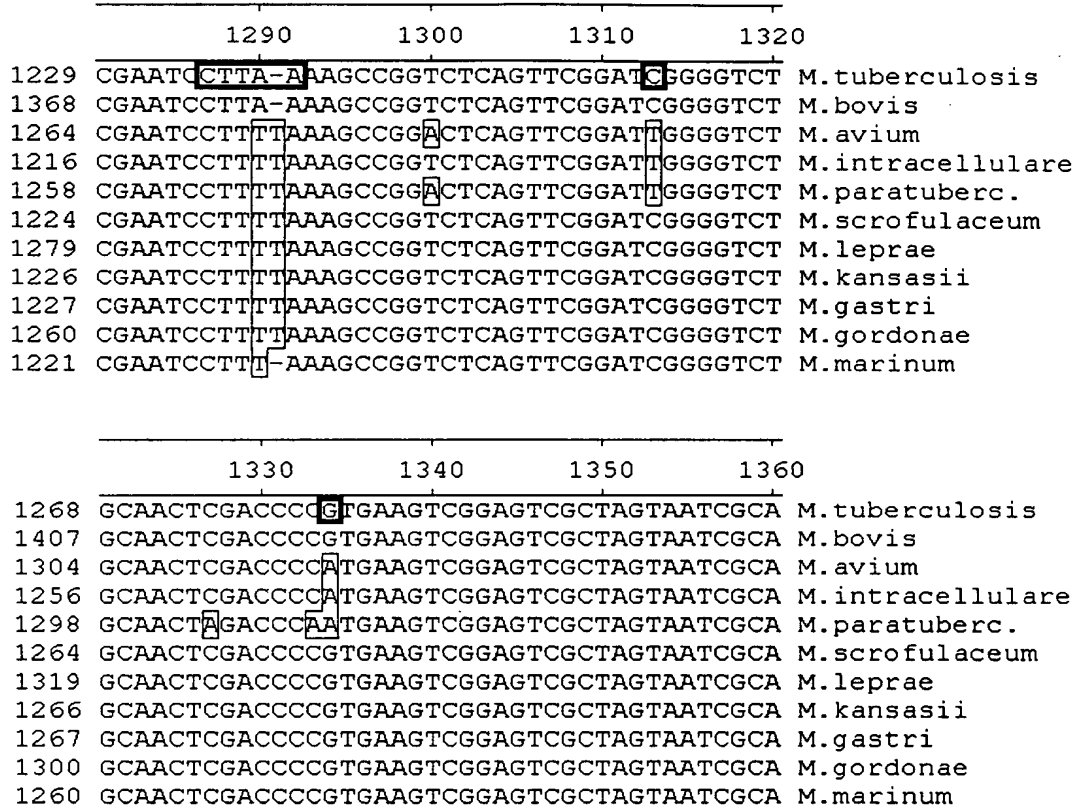


Figure 2D

15/31

50 60 70 80

128 TTCCGAACCCGGAAGCTAAGCCTGCCAGCGCCGATGATAC M.tuberculosis
39 TCCGAACCCGGAAGCTAAGCCTGCCAGCGCCGATGATAC M.bovis
41 TCCGAACCCGGAAGCTAAGCCTGCCAGCGCCATGATAC M.phlei
3559 TACCGAACCCGGAAGCTAAGCCTGCCAGCGCCGATGATAC M.leprae
5743 TCCGAACCCGGAAGCTAAGCCTGCCAGCCCGATGATAC M.smegmatis

90 100 110 120

168 TGCCCTCCCGGG---TGGAAAAGTAGGACACCGCCGAAC M.tuberculosis
79 TGCCCTCCGGGG---TGGAAAAGTAGGACACCGCCGAAC M.bovis
81 TGCCCTCACCGGG---TGGAAAAGTAGGACACCGCCGAAC M.phlei
3599 TGCCCATTCGGG---TGGAAAAGTAGGACACCGCCGAAC M.leprae
5782 TACCCCTTCGGG---TGGAAAAGTAGGACACCGCCGAAC M.smegmatis

Figure 3

www.elsevier.com/locate/jmb

Figure 4A

17/31

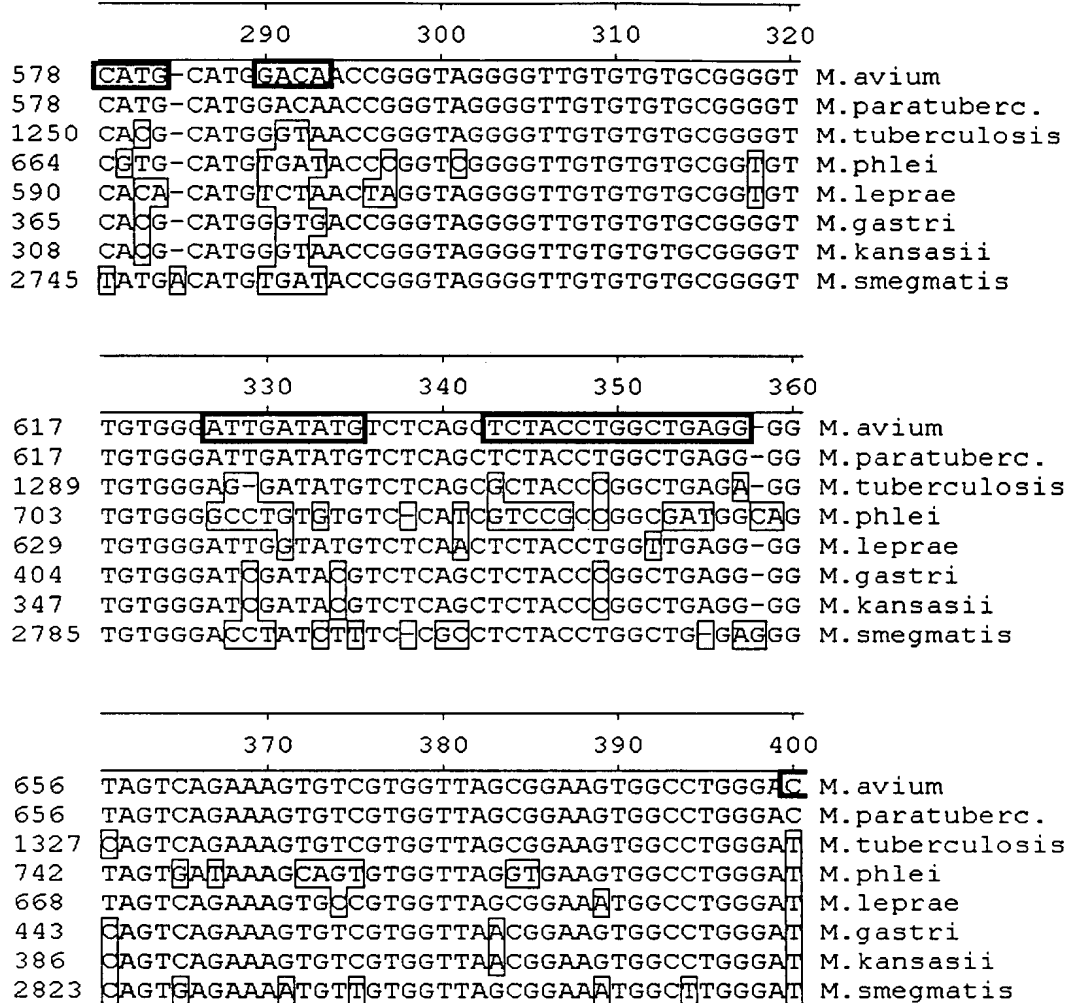


Figure 4B

18/31

	410	420	430	440	
696	GGCCC	CCCGTAGACGGTGAGAGCCCGGTACGCGAAA-ACC	M. avium		
696	GGCCCGCCGTAGACGGTGAGAGCCCGGTACGCGAAA-ACC	M. paratuberc.			
1367	GGTCTGCCGTAGACGGTGAGAGCCCGGTACGCGAAA-ACC	M. tuberculosis			
782	GGTCTGCCGTAGTGGGTGAGAGCCCGTAAC	M. phlei			
708	GGCCTGCCGTAGACGGTGAGAGCCCGGTACGCGAAA-GCC	M. leprae			
483	GGTCTGCCGTAGACGGTGAGAGCCCGGTACGTGAAA-ACC	M. gastri			
426	GGTCTGCCGTAGACGGTGAGAGCCCGGTACGTGAAA-ACC	M. kansasii			
2863	GGCCTCCCGTAGACGGTGAGAGCCCGGTACGTGAAA-ACC	M. smegmatis			

	450	460	470	480	
735	CGGCACCTGCCTTATATCAACA	CCCGAGTAGCAGCGGGCC	M. avium		
735	CGGCACCTGCCTTATATCAACACCCGAGTAGCAGCGGGCC	M. paratuberc.			
1406	CGGCACCTGCCTAGTATCAATTCCCGAGTAGCAGCGGGCC	M. tuberculosis			
820	TGCTGCCGCTGTCACAGG--TCCCGAGTAGCAGCGGGCC	M. phlei			
747	TGGCACCTGCCTTGTATCAATTCCCGAGTAGCAGCGGGCC	M. leprae			
522	CGGCACCTGCCTTGTATCAATTCCCGAGTAGCAGCGGGCC	M. gastri			
465	CGGCACCTGCCTTGTATCAATTCCCGAGTAGCAGCGGGCC	M. kansasii			
2902	CGACGTCTGTCTTGATGGTGTTCCCGAGTAGCAGCGGGCC	M. smegmatis			

- - - -

	570	580	590	600	
855	GAGGGAATGGTGAAAAGTACCCCGGGAGGG-AGTGAAATA	M. avium			
855	GAGGGAATGGTGAAAAGTACCCCGGGAGGG-AGTGAAATA	M. paratuberc.			
1526	GAGGGAATGGTGAAAAGTACCCCGGGAGGGAGTGAAAGA	M. tuberculosis			
937	GAGGGAATGGTGAAAAGTACCCCGGGAGGG-AGTGAAAGA	M. phlei			
867	GAGGGAATGGTGAAAAGTACCCCGGGAGGGAGTGAAATA	M. leprae			
642	GAGGGAATGGTGAAAAGTACCCCGGGAGGGAGTGAAAGA	M. gastri			
585	GAGGGAATGGTGAAAAGTACCCCGGGAGGGAGTGAAAGA	M. kansasii			
3022	GAGGGAATGGTGAAAAGTACCCCGGGAGGGAGTGAAAGA	M. smegmatis			

Figure 4C

19/31

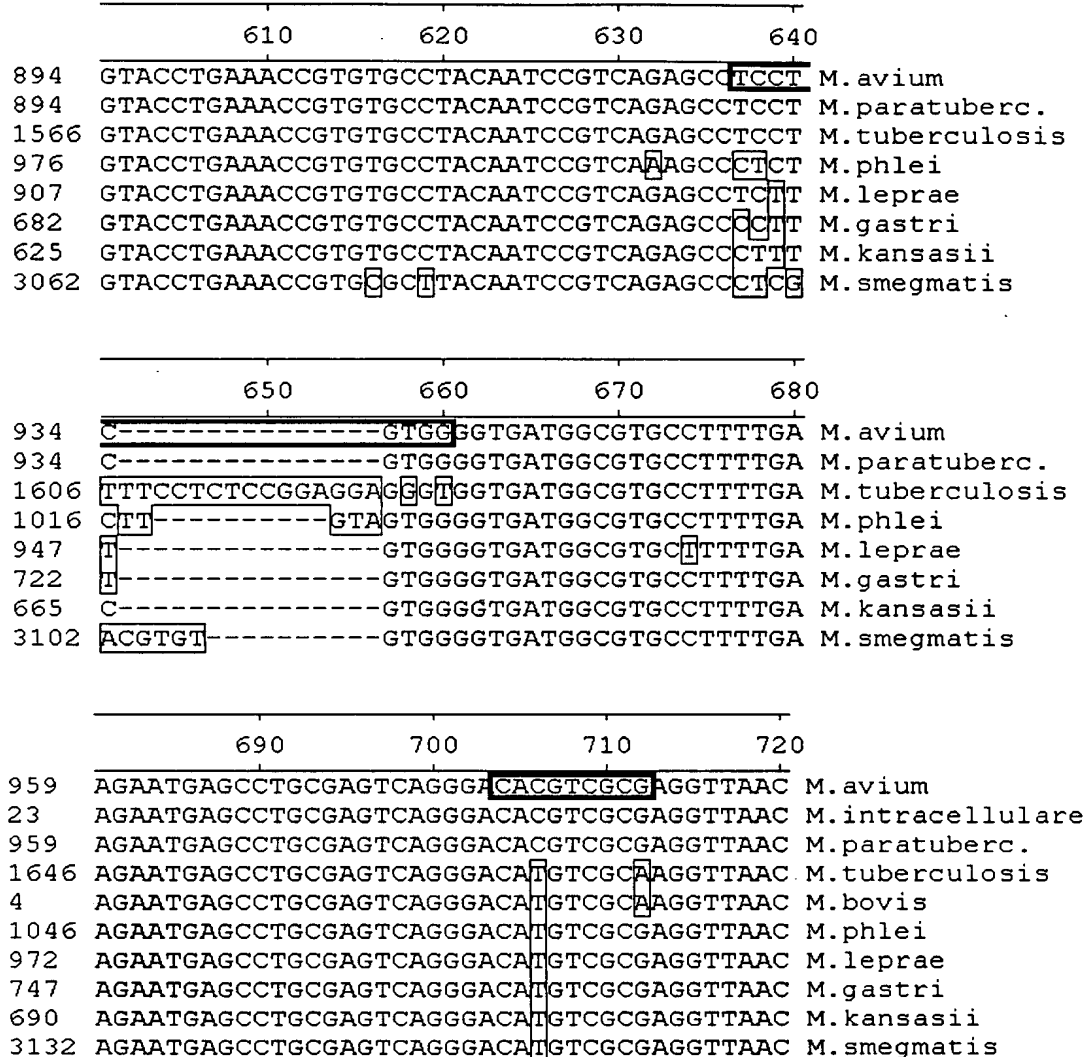


Figure 4D



Figure 4E

21/31

	1250	1260	1270	1280	
1504	CTCACTGGTCAAGTGATT	ATGCGCC	SATAATGTAGCGGGG		M.avium
1504	CTCACTGGTCAAGTGATT	ATGCGCCGATAATGTAGCGGGG			M.paratuberc.
2201	CTCACTGGTCAAGTGATT	GTGCGCCGATAATGTAGCGGGG			M.tuberculosis
1598	CTCACTGGTCAAGTGATT	GTGCGC	AGATAATGTAGCGGGG		M.phlei
1520	CTCACTGGTCAAGTGATT	GTGCGCCGATAATGTAGCGGGG			M.leprae
1294	CTCACTGGTCAAGTGATT	GTGCGCCGATAATGTAGCGGGG			M.gastri
1237	CTCACTGGTCAAGTGATT	GTGCGCCGATAATGTAGCGGGG			M.kansasii
3686	TTCACTGGTCAAGTGATT	GTGCGCCGATA	TTGTGGCGGGG		M.smegmatis

	1290	1300	1310	1320	
1544	CTCAAGCACACCGCCGAAGCCGCGGCACAT	TCATCTT-TA			M.avium
1544	CTCAAGCACACCGCCGAAGCCGCGGCACAT	TCATCTT-TA			M.paratuberc.
2241	CTCAAGCACACCGCCGAAGCCGCGGCACAT	CACCTTGT			M.tuberculosis
1638	CTCAAGCACACCGCCGAAGCCGCGGCA	ATCAGCCTTTG			M.phlei
1560	CTCAAGCACACCGCCGAAGCCGCGGCACAT	TCACCTTCTA			M.leprae
1334	CTCAAGCACACCGCCGAAGCCGCGACA	-----ACCGC-----A			M.gastri
1277	CTCAAGCACACCGCCGAAGCCGCGACA	-----ACCGC-----A			M.kansasii
3726	TTCAAGCACACCGCCGAAGCCGCGGA	-----GCCAACGTTTG			M.smegmatis

	1330	1340	1350	1360	
1583	CGGTGGATGTGGGTAGGGGAGCGT	CCCC	CATTCAGCGAAG		M.avium
1583	CGGTGGATGTGGGTAGGGGAGCGT	CCCCCATTCAGCGAAG			M.paratuberc.
2280	GGTGGGTGTGGGTAGGGGAGCGT	CCCCCATTCAGCGAAG			M.tuberculosis
1676	TGGCTGGTGTGGGTAGGGGAGCGT	CCCATTCAGCGAAG			M.phlei
1600	GGGTGGATGTGGGTAGGGGAGCGT	CCCATTCAGCGAAG			M.leprae
1367	AGGT-----TGGGTAGGGGAGCGT	CCCCCATTCAGCGAAG			M.gastri
1310	AGGT-----TGGGTAGGGGAGCGT	CCCCCATTCAGCGAAG			M.kansasii
3764	TT-----TGGGTAGGGGAGCGT	CCCATTCAGCGAAG			M.smegmatis

Figure 4F

22/31

1370 1380 1390 1400

1623 CT-CGGGTGACCGGTGGTGGAGGGTGGGGGAGTGAGAAT M.avium
 1623 CT-CCGGGTGA^TCGGTGGTGGAGGGTGGGGGAGTGAGAAT M.paratuberc.
 2319 CCACCGGGTGACCGGTGGTGGAGGGTGGGGGAGTGAGAAT M.tuberculosis
 1716 CCGCCGAGTGA^TCGGTGGTGGAGGGTGGGGGAGTGAGAAT M.phlei
 1640 CCTCCGGGT^AACCGGTGGTGGAGGGTGGGGGAGTGAGAAT M.leprae
 1402 CCGCCGGGTGACCGGTGGTGGAGGG^TTGGGGGAGTGAGAAT M.gastri
 1345 CTGCCGGGTGACCGGTGGTGGAGGG^TTGGGGGAGTGAGAAT M.kansasii
 3796 CCGCCGAGTAT^TCGAGTGGTGGAGGGTGGGGGAGTGAGAAT M.smegmatis

1530 1540 1550 1560

1781 CGATGGACAACGGGTTGATATTCCCGTACCCGTGTATGGG M.avium
 1781 CGATGGACAACGGGTTGATATTCCCGTACCCGTGTATGGG M.paratuberc.
 2479 CGATGGACAACGGGTTGATATTCCCGTACCCGTGTGTGGG M.tuberculosis
 1875 CGATGGACAACGGGTTGATATTCCCGTACCCGTGTATGAG M.phlei
 1800 CGATGGACAACGGGTTGATATTCCCGTACCCGTGTGTGTGG M.leprae
 1562 CGATGGACAACGGGTTGATATTCCCGTACCCGTGTGTGGG M.gastri
 1505 CGATGGACAACGGGTTGATATTCCCGTACCCGTGTGTGGG M.kansasii
 3956 CGATGGACAACGGGTTGATATTCCCGTACCCGTGTATGTGG M.smegmatis

1570 1580 1590 1600

1821 CGTCCCTGATGAATCA-GCGGTACTAACCACCCAAAACCG M.avium
 1821 CGTCCCTGATGAATCA-GCGGTACTAACCACCCAAAACCG M.paratuberc.
 2519 CGCCCGTGAGGAATCA-GCGGTACTAACCACCCAAAACCG M.tuberculosis
 1915 CGTCCCTGATGAATCTCATTCTGCTAACCACCCAAAACCG M.phlei
 1840 CGCCCGTGATGAATCA-GCGGTACTAACCACCCAAAACCG M.leprae
 1602 CGCCCGTGATGAATCA-GCGGTACTAACCACCCAAAACCG M.gastri
 1545 CGCCCGTGATGAATCA-GCGGTACTAACCACCCAAAACCG M.kansasii
 3996 CGTCCATGATGAATCA-GCGGTACTAACCACCCAAAACCG M.smegmatis

Figure 4G

CGG4377.10039

23/31

	1610	1620	1630	1640	
1860	GAT-CGATCCAT-TCCCCTTCGGGGG	C-GTGGCGATT-CGG	M.avium		
1860	GAT-CGACCAT-TCCCCTTCGGGGGC	GTGGCGATT-CGG	M.paratuberc.		
2558	GAT-CGATCAC-TCCCCTTCGGGGG	TGTGGAGTTG-TGG	M.tuberculosis		
1955	GGC-CGATC--ATCC--TTCGGGG	--GTGACGGTTG--GG	M.phlei		
1879	GAT-CGACCATATCCCCTTCGGGGGC	TATGGAGGTT-CGG	M.leprae		
1641	GAT-CGATCAC-TCCCCTTCGGGGGA	GTGGAGGTC-TGG	M.gastri		
1584	GAT-CGATCAC-TCCCCTTCGGGGGC	GTGGAGGTC-TGG	M.kansasii		
4035	ACCGTGACCGCACCT--TTCGGGG	--TGTGGCGTTGGTGG	M.smegmatis		

	1650	1660	1670	1680	
1896	GGCTGCGTGGGACCTTCGCTGGTAGTAGTCAAGCAAT	GGG	M.avium		
1896	GGCTGCGTGGGACCTTCGCTGGTAGTAGTCAAGCAATGGG		M.paratuberc.		
2594	GGCTGCGTGGGAACTTCGCTGGTAGTAGTCAAGCGAAGGG		M.tuberculosis		
1986	GGCTGCGTGGGACCG-GTG	GGTAGTAGTCAAGCGATGGG	M.phlei		
1917	GGCTGCGTGGGAACTTCGTTGGTAGTAGTCAAGCGATGGG		M.leprae		
1677	GGCTGCGTGGGAGCCTTCGCTGGTAGTAGTCAAGCGATGGG		M.gastri		
1620	GGCTGCGTGGGAGCCTTCGCTGGTAGTAGTCAAGCGATGGG		M.kansasii		
4071	GGCTGCAATGGGACCTTCGTTGGTAGTAGTCAAGCGATGGG		M.smegmatis		

	1690	1700	1710	1720	
1936	-GTGACGCAGGAAGGCAGCCGTACCAGTCAGTGGTAATA-		M.avium		
1936	-GTGACGCAGGAAGGCAGCCGTACCAGTCAGTGGTAATA-		M.paratuberc.		
2634	-GTGACGCAGGAAGGTTAGCCGTACCAGTCAGTGGTAACA-		M.tuberculosis		
2025	-GTGACGCAGGAAGGTTAGCCGTACCAGTCAGTGGTAATA-		M.phlei		
1957	-GTGACGCAGGAAGGTTAGCCGTACCAGTCAGTGGTAATA-		M.leprae		
1717	-GTGACGCAGGAAGGCAGCCGTACCAGTCAGTGGTAATA-		M.gastri		
1660	-GTGACGCAGGAAGGCAGCCGTACCAGTCAGTGGTAATA-		M.kansasii		
4111	-GTGACGCAGGAAGGTTAGCCGTACCGTTCAGTGGTAATA-		M.smegmatis		

	1730	1740	1750	1760	
1974	-CTGGGGCAAGCCCGTAG--AGAGCGATAGGCAAATCCGT		M.avium		
1974	-CTGGGGCAAGCCCGTAG--AGAGCGATAGGCAAATCCGT		M.paratuberc.		
2672	-CTGGGGCAAGCCCGTAGGGAGAGCGATAGGCAAATCCGT		M.tuberculosis		
2063	-CTGGGGTAAACCTGTAGGGGAGTATAGGCAAATCCGT		M.phlei		
1995	-CTGGAGCAAGCCCGTAGGGAGAGCGATAGGCAAATCCGT		M.leprae		
1755	-CTGGGGCAAGCCAGTAGGGAGAGCGATAGGCAAATCCGT		M.gastri		
1698	-CTGGGGCAAGCCAGTAGGGAGAGCGATAGGCAAATCCGT		M.kansasii		
4149	-CTGGCGTAAGCCGTAGGGAGTCAGATAGGTAATCCGT		M.smegmatis		

Figure 4H

0894377-100397

24/31

	1810	1820	1830	1840	
2051	CG-AATTCGGTGATCCTCTGCTGCCAAGAAAAGCCTCTA-				M.avium
2051	CG-AATTCGGTGATCCTCTGCTGCCAAGAAAAGCCTCTA-				M.paratuberc.
2751	CG-AATTCGGTGATCCTCTGCTGCCAAGAAAAGCCTCTA-				M.tuberculosis
2141	CG-AATTCGGTGATCCTCTGCTGCCAAGAAAAGCCTCTA-				M.phlei
2074	CG-AATTCGGTGATCCTCTGCTGCCAAGAAAAGCCTCTA-				M.leprae
1834	CG-AATTCGGTGATCCTCTGCTGCCAAGAAAAGCCTCTA-				M.gastri
1777	CG-AATTCGGTGATCCTCTGCTGCCAAGAAAAGCCTCTA-				M.kansasii
4228	CG-AATTCGGTGATCCTCTGCTGCCAAGAAAAGCCTCTA-				M.smegmatis
	1850	1860	1870	1880	
2089	GCGAGCACATACACGCGCCCGTACCCCAAACCAACACAGGT				M.avium
2089	GCGAGCACATACACGCGCCCGTACCCCAAACCAACACAGGT				M.paratuberc.
2789	GCGAGCACACACACGCGCCCGTACCCCAAACCAACACAGGT				M.tuberculosis
2179	GCGAGCACACACACGCGCCCGTACCCCAAACCAACACAGGT				M.phlei
2112	GCGAGCACACACACGCGCCCGTACCCCAAACCAACACAGGT				M.leprae
1872	GCGAGCACACACACGCGCCCGTACCCCAAACCAACACAGGT				M.gastri
1815	GCGAGCACACACACGCGCCCGTACCCCAAACCAACACAGGT				M.kansasii
4266	GCGAGCACACACACGCGCCCGTACCCCAAACCAACACAGGT				M.smegmatis

	1970	1980	1990	2000	
2208	AGGGGGGACCGGAATACCGTGAACACCCTTGCGGTGGGAGC				M.avium
2208	AGGGGGGACCGGAATACCGTGAACACCCTTGCGGTGGGAGC				M.paratuberc.
2908	AGGGGGGACCGGAATACCGTGAACACCCTTGCGGTGGGAGC				M.tuberculosis
2298	AGGGGGGACCGGAATACCGTGAACACCCTTGCGGTGGGAGC				M.phlei
2231	AGGGGGGACCGGAATACCGTGAACACCCTTGCGGTGGGAGC				M.leprae
1910					M.gastri
1934	AGGGGGGACCGGAATACCGTGAACACCCTTGCGGTGGGAGC				M.kansasii
4385	AGGGGGGACCGGAATACCGTGAACACCCTTGCGGTGGGAGC				M.smegmatis
	2010	2020	2030	2040	
2248	GGGATTCGGTCGCAGAAACCAAGTGGGTAGCGACT-GTTTA				M.avium
2248	GGGATTCGGTCGCAGAAACCAAGTGGGTAGCGACT-GTTTA				M.paratuberc.
2948	GGGATTCGGTCGCAGAAACCAAGTGGGTAGCGACT-GTTTA				M.tuberculosis
2338	GGGATTCGGTCGCAGAAACCAAGTGGGTAGCGACT-GTTTA				M.phlei
2271	GGGATTCGGTCGCAGAAACCAAGTGGGTAGCGACT-GTTTA				M.leprae
1910					M.gastri
1974	GGGATTCGGTCGCAGAAACCAAGTGGGTAGCGACT-GTTTA				M.kansasii
4425	GGGATTCGGTCGCAGAAACCAAGTGGGTAGCGACT-GTTTA				M.smegmatis

Figure 4I

25/31

	2130	2140	2150	2160	
2367	CCGTTAACCC	GT	--AAGGGTGAAGCGGAGAATTTAAGCCC		M.avium
2367	CCGTTAACCCGT	--AAGGGTGAAGCGGAGAATTTAAGCCC			M.paratuberc.
3067	CCGTTAACCCG	--AAGGGTGAAGCGGAGAATTTAAGCCC			M.tuberculosis
2457	CCGTTAACCC	TTTCGG	GGGTGAAGCGGAGAATTTAAGCCC		M.phlei
2390	CGTTAACCCGA	--AAGGGTGAAGCGGAGAATTTAAGCCC			M.leprae
1910					M.gastri
2094	CCGTTAACCCG	--AAGGGTGAAGCGGAGAATTTAAGCCC			M.kansasii
4544	CCGTTAACCC	CCTTGG	GGGTGAAGCGGAGAATTTAAGCCC		M.smegmatis

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	2250	2260	2270	2280	
2485	GTAACGACTTC	CCAA	TTGTCTCAACCATAGACTCGGCGAA		M.avium
2485	GTAACGACTTCCCA	ACTGTCTCAACCATAGACTCGGCGAA			M.paratuberc.
3185	GTAACGACTTCT	CAACTGTCTCAACCATAGACTCGGCGAA			M.tuberculosis
2577	GTAACGACTTCT	CAACTGTCTCAACCATAGACTCGGCGAA			M.phlei
2508	GTAACGACTTCT	CAACTGTCTCAACCATAGACTCGGCGAA			M.leprae
1910					M.gastri
2212	GTAACGACTTCT	CAACTGTCTCAACCATAGACTCGGCGAA			M.kansasii
4663	GTAACGACTTCT	CAACTGTCTCAAC	ATAGACTCGGCGAA		M.smegmatis

- - - -

	2370	2380	2390	2400	
2605	GTTTCGGTACGGTTTGTGTAGGATAGGTGGGAGACT	TTGAA			M.avium
2605	GTTTCGGTACGGTTTGTGTAGGATAGGTGGGAGACTTTGAA				M.paratuberc.
3305	GTTTCGGTACGGTTTGTGTAGGATAGGTGGGAGACT	GTGAA			M.tuberculosis
2697	GTCGATACGGTTTGTGTAGGATAGGTGGGAGACT	GTGAA			M.phlei
2628	GTTTCGGTTCGGTTTGTGTAGGATAGGTGGGAGACT	GTGAA			M.leprae
1910					M.gastri
2332	GTTTCGGTACGGTTTGTGTAGGATAGGTGGGAGACT	GTGAA			M.kansasii
4782	GTCGATACGGTTTGTGTAGGATAGGTGGGAGACT	GTGAA			M.smegmatis

Figure 4J

66007 242490

26/31

	2410	2420	2430	2440	
2645	GCACAGACGCCAGTTTGTGTGGAGTCGTTGTTGAAATACC				M. avium
393	ATACAGACGCCAGTTTGTGTGGAGTCGTTGTTGAAATACC				M. intracellulare
2645	GCACAGACGCCAGTTTGTGTGGAGTCGTTGTTGAAATACC				M. paratuberc.
3345	ACCTCGACGCCAGTTGGGGGGAGTCGTTGTTGAAATACC				M. tuberculosis
284	ACCTCGACGCCAGTTGGGGGGAGTCGTTGTTGAAATACC				M. bovis
2737	GCTCGACGCCAGTTGGGGGGAGTCGTTGTTGAAATACC				M. phlei
2668	ACTTCGACGCTAGTTGGGGGGAGTCGTTGTTGAAATACC				M. leprae
1910					M. gastri
2372	ACCTCAACGCCAGTTGGGGGGAGTCGTTGTTGAAATACC				M. kansasii
4822	GCTCAACGCCAGTTGGGGGGAGTCGTTGTTGAAATACC				M. smegmatis

	2450	2460	2470	2480	
2685	ACTCTGATCGTATTGGACACCTAACGTCGAACCCT-TATC				M. avium
433	ACTCTGATCGTATTGGACACCTAACGTCGAACCCT-TATC				M. intracellulare
2685	ACTCTGATCGTATTGGACACCTAACGTCGAACCCT-TATC				M. paratuberc.
3385	ACTCTGATCGTATTGGGCATCTAACCTCGAACCCTGAATC				M. tuberculosis
324	ACTCTGATCGTATTGGGCATCTAACCTCGAACCCTGAATC				M. bovis
2777	ACTCTGATCGTATTGGGCCTCTAACCTCGGACCCTGGATC				M. phlei
2708	ACTCTGATCTGATTGACATCTAACCTCGAACCCTATATC				M. leprae
1910					M. gastri
2412	ACTCTGATCGTATTGGACACCTAACGTCGAACCCTGAATC				M. kansasii
4862	ACTCTGATCGTATTGGGCCTCTAACCTCGGACCCTATATC				M. smegmatis

- - - -

	2690	2700	2710	2720	
2924	GGTGTCTCTCAACGGATAAAAGGTACCCCGGGGATAACGG				M. avium
2924	GGTGTCACTCAACGGATAAAAGGTACCCCGGGGATAACAG				M. paratuberc.
3625	GGTGTCTCTCAACGGATAAAAGGTACCCCGGGGATAACAG				M. tuberculosis
3017	GGTGTCTCTCAACGGATAAAAGGTACCCCGGGGATAACAG				M. phlei
2948	GGTGTCTCTCAACGGATAAAAGGTACCCCGGGGATAACAG				M. leprae
1910					M. gastri
2652	GGTGTCTCTCAACGGATAAAAGGTACCCCGGGGATAACAG				M. kansasii
5102	GGTGTCTCTCAACGGATAAAAGGTACCCCGGGGATAACAG				M. smegmatis

	2730	2740	2750	2760	
2964	GCTGATCTTCCCCAAGAGTCCATATCGACGGGATGGTTTG				M. avium
2964	GCTGATCTTCCCCAAGAGTCCATATCGACGGGATGGTTTG				M. paratuberc.
3665	GCTGATCTTCCCCAAGAGTCCATATCGACGGGATGGTTTG				M. tuberculosis
3057	GCTGATCTTCCCCAAGAGTCCATATCGACGGGATGGTTTG				M. phlei
2988	GCTGATCTTCCCCAAGAGTCCATATCGACGGGATGGTTTG				M. leprae
1910					M. gastri
2692	GCTGATCTTCCCCAAGAGTCCATATCGACGGGATGGTTTG				M. kansasii
5142	GCTGATCTTCCCCAAGAGTCCATATCGACGGGATGGTTTG				M. smegmatis

Figure 4K

26E00T 44E4680

27/31

	2770	2780	2790	2800	
3004	GCACCTCGATGTCGGCTCGTCGCATCCTGGGGCTGGAGCA				M. avium
3004	GCACCTCGATGTCGGCTCGTCGCATCCTGGGGCTGGAGCA				M. paratuberc.
3705	GCACCTCGATGTCGGCTCGTCGCATCCTGGGGCTGGAGCA				M. tuberculosis
3097	GCACCTCGATGTCGGCTCGTCGCATCCTGGGGCTGGAGCA				M. phlei
3028	GCACCTCGATGTCGGCTCGTCGCATCCTGGGGCTGGAGCA				M. leprae
1910					M. gastri
2732	GCACCTCGATGTCGGCTCGTCGCATCCTGGGGCTGGAGCA				M. kansasii
5182	GCACCTCGATGTCGGCTCGTCGCATCCTGGGGCTGGAGCA				M. smegmatis
	2810	2820	2830	2840	
3044	GGTCCCAAGGGTTGGGCTGTTGCGCC-ATTAAAGCGGCAC				M. avium
3044	GGTCCCAAGGGTTGGGCTGTTGCGCC-ATTAAAGCGGCAC				M. paratuberc.
3745	GGTCCCAAGGGTTGGGCTGTTGCGCC-ATTAAAGCGGCAC				M. tuberculosis
3137	GGTCCCAAGGGTTGGGCTGTTGCGCC-ATTAAAGCGGCAC				M. phlei
3068	GGTCCCAAGGGTTGGGCTGTTGCGCC-ATTAAAGCGGCAC				M. leprae
1910					M. gastri
2772	GGTCCCAAGGGTTGGGCTGTTGCGCC-ATTAAAGCGGCAC				M. kansasii
5222	GGTCCCAAGGGTTGGGCTGTTGCGCC-ATTAAAGCGGCAC				M. smegmatis

	3050	3060	3070	3080	
3283	CAAGATCAGGTTT-CTCACCC	TTT	TAGA	GGGATAAGGCC	M. avium
638	CAAGATCAGGTTT-CTCACCC	TTT	TAGA	GGGATAAGGCC	M. intracellulare
3283	CAAGATCAGGTTT-CTCACCC	TTT	TAGA	GGGATAAGGCC	M. paratuberc.
3984	CAAGATCAGGTTT-CTCACCC	ACTTGG	GGGATAAGGCC		M. tuberculosis
570	CAAGATCAGGTTT-CTCACCC	ACTTGG	GGGATAAGGCC		M. bovis
3376	CAAGATCAGGTTT-CTCACCC	CTAGG	GAGGATAAGGCC		M. phlei
3307	CAA				M. leprae
1910					M. gastri
3011	CAAGATCAGGTTT-CTCACCC	ACTTGG	GGGATAAGGCC		M. kansasii
5462	CAAGATCAGGTTT-CTCACCC	CTAGG	GAGGATAAGGCC		M. smegmatis
	3090	3100	3110	3120	
3322	CCCGC-AGACCACGGG	ATTGATAGGC	CAGACCTGGAAGCT		M. avium
677	CCCGC-AGACCACGGG	TTTGATAGGCC	CAGACCTGGAAGCT		M. intracellulare
3322	CCCGC-AGATCACGGG	ATTGATAGGCC	CAGACCTGGAAGCT		M. paratuberc.
4023	CCCGC-AGATCACGGG	TTCAATAGGC	CAGACCTGGAAGCT		M. tuberculosis
609	CCCGC-AGATCACGGG	TTCAATAGGC	CAGACCTGGAAGCT		M. bovis
3415	CCCGC-AGACCACGGG	ATGATAGACC	CAGACCTGGAAGCT		M. phlei
3309					M. leprae
1910					M. gastri
3050	CCCGC-AGATCACGGG	TTTGATAGGCC	CAGACCTGGAAGCT		M. kansasii
5501	CCCGC-AGACCACGGG	ATTGATAGACC	CAGACCTGGAAGCT		M. smegmatis

Figure 4L

0894377-100397

28/31

	130	140	150	160	
107	GAGTAACACGTGGG	CA	ATCTGCCCTGCACTTC	-GGGATAA	M.avium
59	GAGTAACACGTGGGCAATCT	GCCCTGCACTTC	-GGGATAA		M.intracellulare
107	GAGTAACACGTGGGCAATCT	ACCCTGCACTTC	-GGGATAA		M.paratuberc.
70	GAGTAACACGTGGGCAATCT	GCCCTGCACTTC	-GGGATAA		M.scrofulaceum
70	GAGTAACACGTGGGTG	ATCTGCCCTGCACTTC	-GGGATAA		M.tuberculosis
209	GAGTAACACGTGGGTG	ATCTGCCCTGCACTTC	-GGGATAA		M.bovis
120	GAGTAACACGTGGGT	AATCTGCCCTGCACTTC	AGGGATAA		M.leprae
69	GAGTAACACGTGGGCAATCT	GCCCTGCACACC	-GGGATAA		M.kansasii
70	GAGTAACACGTGGGCAATCT	GCCCTGCACACC	-GGGATAA		M.gastri
104	GAGTAACACGTGGGT	AATCTGCCCTGCACATC	-GGGATAA		M.gordonae
64	GAGTAACACGTGGGC	ATCTGCCCTGCACTTC	-GGGATAA		M.marinum
- - - -					
	450	460	470	480	
424	AAACCTCTTTACCATCGACGAAGGTCCGGG	TTTT	CTCGG		M.avium
376	AAACCTCTTTACCATCGACGAAGGTCCGGG	TTTTCTCGG			M.intracellulare
424	AAACCTCTTTACCATCGACGAAGGTCCGGG	TTTTCTAGG			M.paratuberc.
387	AAACCTCTTTACCATCGACGAAGGTCTCA	---CTTTGTGG			M.scrofulaceum
389	AAACCTCTTTACCATCGACGAAGGTCCGGG	TTCTCTCGG			M.tuberculosis
528	AAACCTCTTTACCATCGACGAAGGTCCGGG	TTCTCTCGG			M.bovis
439	AAACCTCTTTACCATCGACGAAGGTCTGGG	AATTCTCTCGG			M.leprae
386	AAACCTCTTTACCATCGACGAAGGTCCGGG	TTCTCTCGG			M.kansasii
387	AAACCTCTTTACCATCGACGAAGGTCCGGG	TTCTCTCGG			M.gastri
420	AAACCTCTTTACCATCGACGAAGGTCCGGG	TTTTCTCTCGG			M.gordonae
381	AAACCTCTTTACCATCGACGAAGGT	TCGGGTTTTCTCGG			M.marinum
	490	500	510	520	
429	ATTGACGGTAGGTGGAGAAGAAGCACCGGCCAACTACGTG				M.tuberculosis
568	ATTGACGGTAGGTGGAGAAGAAGCACCGGCCAACTACGTG				M.bovis
464	ATTGACGGTAGGTGGAGAAGAAGCACCGGCCAACTACGTG				M.avium
416	ATTGACGGTAGGTGGAGAAGAAGCACCGGCCAACTACGTG				M.intracellulare
464	ATTGACGGTAGGTGGAGAAGAAGCAC	-----	ACTACGTG		M.paratuberc.
424	ATTGACGGTAGGTGGAGAAGAAGCACCGGCCAACTACGTG				M.scrofulaceum
479	ATTGACGGTAGGTGGAGAAGAAGCACCGGCCAACTACGTG				M.leprae
426	ATTGACGGTAGGTGGAGAAGAAGCACCGGCCAACTACGTG				M.kansasii
427	ATTGACGGTAGGTGGAGAAGAAGCACCGGCCAACTACGTG				M.gastri
460	ATTGACGGTAGGTGGAGAAGAAGCACCGGCCAACTACGTG				M.gordonae
421	ATTGACGGTAGGTGGAGAAGAAGCACCGGCCAACTACGTG				M.marinum

Figure 5A

29/31

	1130	1140	1150	1160	
1104	TCTCATGTTGCCAG	GGGTAATGC	CGGGGACTCGTGAGAG		M.avium
1056	TCTCATGTTGCCAGCGGGTAATGCCGGGGACTCGTGAGAG				M.intracellulare
1098	TCTCATGTTGCCAGCGGGTAATGC	GGGGACTCGTGAGAG			M.paratuberc.
1064	TCTCATGTTGCCAGCGGGTAATGCCGGGGACTCGTGAGAG				M.scrofulaceum
1069	TCTCATGTTGCCAGCACGTAATG	STGGGGACTCGTGAGAG			M.tuberculosis
1208	TCTCATGTTGCCAGCACGTAATG	STGGGGACTCGTGAGAG			M.bovis
1119	TCTCATGTTGCCAGCACGTAATG	STGGGGACTCGTGAGAG			M.leprae
1066	TCTCATGTTGCCAGCGGGTAATGCCGGGGACTCGTGAGAG				M.kansasii
1067	TCTCATGTTGCCAGCGGGTAATGCCGGGGACTCGTGAGAG				M.gastri
1100	TCTCATGTTGCCAGCGGGTAATGCCGGGGACTCGTGAGAG				M.gordonae
1061	TCTCATGTTGCCAGCACGTAATG	STGGGGACTCGTGAGAG			M.marinum

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	1290	1300	1310	1320	
1264	CGAATCCTTTTAAAGCCGGACTCAGTTCGGAT	TGGGGTCT			M.avium
1216	CGAATCCTTTTAAAGCCGGTCTCAGTTCGGATTGGGGTCT				M.intracellulare
1258	CGAATCCTTTTAAAGCCGGACTCAGTTCGGATTGGGGTCT				M.paratuberc.
1224	CGAATCCTTTTAAAGCCGGTCTCAGTTCGGAT	GGGGTCT			M.scrofulaceum
1229	CGAATCCTTTAAAGCCGGTCTCAGTTCGGAT	GGGGTCT			M.tuberculosis
1368	CGAATCCTTTAAAGCCGGTCTCAGTTCGGAT	GGGGTCT			M.bovis
1279	CGAATCCTTTTAAAGCCGGTCTCAGTTCGGAT	GGGGTCT			M.leprae
1226	CGAATCCTTTTAAAGCCGGTCTCAGTTCGGAT	GGGGTCT			M.kansasii
1227	CGAATCCTTTTAAAGCCGGTCTCAGTTCGGAT	GGGGTCT			M.gastri
1260	CGAATCCTTTTAAAGCCGGTCTCAGTTCGGAT	GGGGTCT			M.gordonae
1221	CGAATCCTTTAAAGCCGGTCTCAGTTCGGAT	GGGGTCT			M.marinum

	1330	1340	1350	1360	
1304	GCAACTCGACCCCATGAAGTCGGAGTCGCTAGTAATCGCA				M.avium
1256	GCAACTCGACCCCATGAAGTCGGAGTCGCTAGTAATCGCA				M.intracellulare
1298	GCAACTCGACCCCATGAAGTCGGAGTCGCTAGTAATCGCA				M.paratuberc.
1264	GCAACTCGACCCCATGAAGTCGGAGTCGCTAGTAATCGCA				M.scrofulaceum
1268	GCAACTCGACCCCATGAAGTCGGAGTCGCTAGTAATCGCA				M.tuberculosis
1407	GCAACTCGACCCCATGAAGTCGGAGTCGCTAGTAATCGCA				M.bovis
1319	GCAACTCGACCCCATGAAGTCGGAGTCGCTAGTAATCGCA				M.leprae
1266	GCAACTCGACCCCATGAAGTCGGAGTCGCTAGTAATCGCA				M.kansasii
1267	GCAACTCGACCCCATGAAGTCGGAGTCGCTAGTAATCGCA				M.gastri
1300	GCAACTCGACCCCATGAAGTCGGAGTCGCTAGTAATCGCA				M.gordonae
1260	GCAACTCGACCCCATGAAGTCGGAGTCGCTAGTAATCGCA				M.marinum

Figure 5B

25500T 224680

30/31

Mavium 23S:
2550 | TTACCGCGGCAGGACGAAAGACCCCGGACCTTCACTA
2568 2569 |
2589 |

Figure 6

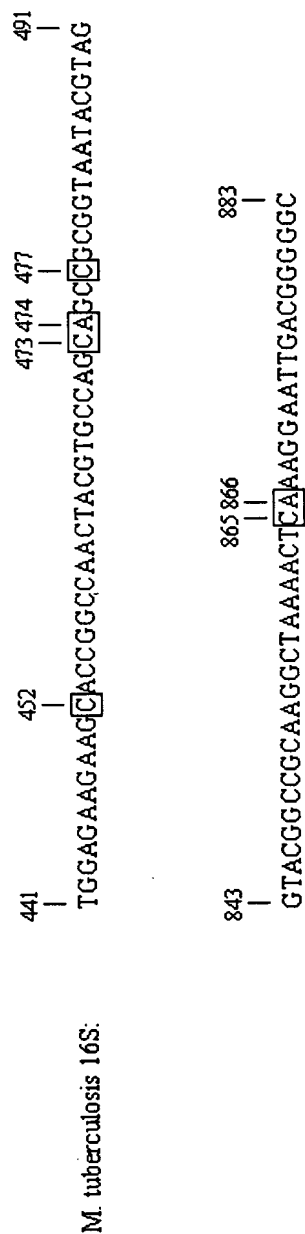


Figure 7